2006

An Exploratory Study of: Designers' Finishing Knowledge and the Communication Flow between Designers and Finishing Professionals

Melissa A. Lyon

An Exploratory Study of: Designers' Finishing Knowledge and the Communication Flow between Designers and Finishing Professionals

By

Melissa A. Lyon

A thesis submitted in partial fulfillment of the
requirements for the degree of Master of Science in the
School of Print Media in the College
of Imaging Arts and Sciences of the
Rochester Institute of Technology

December 2006

Primary Thesis Advisor: Professor Frank Cost
Secondary Thesis Advisor: Professor Therese Hannigan
Secondary Thesis Advisor: Professor Adam Smith

School of Print Media
Rochester Institute of Technology
Rochester, New York

Certificate of Approval

An Exploratory Study of:
Designers' Finishing Knowledge and the
Communication Flow between
Designers and Finishing Professionals

This is to certify that the Master's Thesis of
Melissa A. Lyon

has been approved by the Thesis Committee as satisfactory
for the thesis requirement for the Master of Science degree
at the convocation of
December 2006

Thesis Committee:

Frank Cost
Primary Thesis Advisor

Therese Hannigan
Secondary Thesis Advisor

Adam Smith
Secondary Thesis Advisor

Illegible Signature
Graduate Thesis Coordinator

Illegible Signature
Graduate Program Coordinator

Illegible Signature
Chair, SPM

An Exploratory Study of: Designers' Finishing Knowledge and the Communication Flow between Designers and Finishing Professionals

I, Melissa Lyon hereby grant permission to the Wallace Memorial Library of R.I.T. to reproduce my thesis in whole or in part. Any reproduction will not be for commercial use or profit.

Date: December 2006 Student's signature Melissa Lyon

Acknowledgments

I would like to thank everyone involved in the development, formulation and production of this thesis, including my R.I.T. professors, thesis advisors, interview candidates, friends and family. I would like to thank the following people (listed in alphabetical order) for their assistance: John Cammarosano, Jeff Congdon, Frank Cost, Twyla Cummings, Ed DeLorm, Nicholas DiFonzo, Anne Esse, Michele Hamilton McDonald, Chris Hanna, Tom Hanney, Therese Hannigan, Penny Herrick, Bruce Hickey, Wendy Kelly, Marty Kesel, Jeff Lennox, Brian Lyon, Nathan Martel, Melissa McNaughton, Charlotte Mis, Randy Naccarella, Jeff O'Shea, Tim Perkins, Tom Pinzon, Carol Reynolds, Adam Smith, Don Stuhler, Rick Tatanus, Jennifer Wagner, Steve Whittaker, Christina Williams, Marie Wood, Katie Woodson and Nick Woyciesjes.

Table of Contents

List of Tables....vi
List of Figures....vii
Abstract....viii
Chapter 1: Introduction....1
Problem Investigated....1
Scope....1
Objective....2
Reasons for Interest....2
Chapter 2: A Review of the Literature in the Field....4
Industry Overview....4
Roles in the Industry....6
Designers' Finishing Knowledge....9
Printers' Finishing Knowledge....10
Communication Flow....11
Chapter 3: Research Questions....12
Chapter 4: The Methodology....13
Preliminary Interviews....13
Interview Questions....14
Interview Process and Resources....15
Data Analysis Methods....15
Chapter 5: The Results....16
Designers' Finishing Knowledge....16
Communication Flow between Designers and Finishing Professionals....17
Chapter 6: Summary and Conclusions....19
Designers Lack Finishing Knowledge....19
A Gap Exists in the Communication Flow between Designers and Finishers....26
Other Findings....32
Chapter 7: Recommendations....37
Graphic Design Curriculum Recommendations....37
Recommendations for Designers....38
Recommendations for Printers/Finishers....43

Recommendations for Further Investigation....45
Bibliography....46
Appendix A: Interview Questions....49
Appendix B: Extended Results Data....52
Rochester-Related Information....53
Designers' Question Results....53
Printers'/Finishers' Question Results....69
Appendix C: Recommendations for Graphic Design College Curriculum....83
Appendix D: Recommended Communication Questions (partial list)....86

List of Tables

Table 1B. Designer interview subject information.....54
Table 2B. Percent of time printers/finishers supply designers with correct information..58
Table 3B. Designers rate printers'/finishers' design knowledge.....60
Table 4B. Designers' self rating of finishing knowledge.....61
Table 5B. Instances where printers/finishers helped designers.....62
Table 6B. Instances where printers/finishers hindered designers.....65
Table 7B. Time (minutes per week) designers are educated by their printers/finishers....67
Table 8B. Printer/finisher interview subject information.....70
Table 9B. Time (minutes per week) printers/finishers spend educating designers.....73
Table 10B. Instances where designers helped printers/finishers.....75
Table 11B. Instances where designers hindered printers/finishers.....77
Table 12B. Printers/finishers rate designers' knowledge of finishing.....80

List of Figures

Figure 1. Designers' knowledge of finishing compared to industry experience.....21
Figure 2. Finishing knowledge compared.....25
Figure 3. Designers' current workflow (varies depending on type of project and companies involved.....26
Figure 4. Printers/finishers and designers rate each other.....34
Figure 5. Recommended project workflow.....40

Abstract

Several fundamental questions about graphic designers' print finishing knowledge motivated this thesis. Is there a gap in knowledge between the fields of finishing and design? What do designers actually know about finishing? Is this knowledge enough to enable them to communicate well with printers/finishers and design printed pieces efficiently so finishing runs smoothly? What happens when mistakes are made due to a lack of education and communication? If designers do need to know more information about finishing, what are the most important concepts? Are there any resources now that designers can use to learn more about finishing? Do printers/finishers have advice for designers about finishing?

In order to collect information on this subject, a questionnaire was developed, twenty-two professionals in the Rochester (NY) area graphic arts industry were interviewed and their answers were recorded.

The interview results were analyzed and common themes were discovered. Designers do not have adequate finishing knowledge and there is a communication gap between designers and finishing professionals.

Those just starting out in the industry with a degree in Graphic Design have not been previously taught about finishing and do not have the necessary knowledge of finishing operations and procedures to make correct file creation decisions.

Design professionals rarely communicate with printers/finishers except to acquire a print quote or sign a press approval. Designers also do not know what questions to ask. They see their projects on one-dimensional computer monitors and are not aware of the three-dimensional problems that occur in the finishing world. Designers often do not learn from mistakes made during project workflows because they are not aware of the reasons for those mistakes. Printers/finishers do not share this information with designers, increasing the chances that the mistakes will reoccur.

In the current workflow, designers and printers/finishers often do not interact or communicate with each other before projects are given to printers to be printed. Many assumptions are made throughout the workflow. Finishers think designers know the correct finishing information or are informed by their printers/printing salespersons. Printing salespersons often lack the knowledge about finishing operations and procedures. Sometimes printing salespersons have knowledgeable suggestions, but it is often too late in the workflow for designers to make changes to the digital files.

The lack of knowledge and communication in the graphic arts workflow results in the loss of time, money and resources for everyone involved. Each person in the graphic arts workflow needs to play his/her part in providing proper education and closing the communication gap.

In college Graphic Design programs, designers need to be educated about the entire workflow, from start to finish, including finishing materials, processes, limitations, key terms, financial ramifications and proper digital file setup. Designers need to know

the right questions to ask printers/finishers about each of the finishing processes. Designers should tour a finishing facility and acquire hands-on finishing experience.

Design professionals need to ask printers/finishers questions about finishing requirements for proper digital file setup. Before submitting final designs to printers, designers should go over physical mock-ups with printers and finishers to ensure the designs meet printing/finishing requirements. Designers need to be open to feedback and suggestions made by printers/finishers and need to build time into their workflow so the suggested changes can be made. Designers need to educate clients paying for the projects on the importance of this step in the workflow and educate clients about production timelines.

Printers and printing salespersons need to be knowledgeable about finishing so they can answer designers' questions. Printers/finishers need to provide designers with examples of good design decisions. They should also show designers examples of poor design and the results of incorrect digital file-preparation decisions. Printers/finishers should create guide books or other resources about their specific printing/finishing requirements in order to help designers understand their processes.

Chapter 1

Introduction

Problem Investigated

Some of the problems in the graphic arts industry are the loss of time, money and resources, missed opportunity for creativity and substandard project quality. These problems can result in customer frustrations or disappointments, rejected jobs or bounced jobs (customer will not pay for the job) and legal battles. If jobs are too expensive or unsatisfactory, customers may turn to other design and printing/finishing companies or find another way to communicate their message through other types of media. Designers need to understand that they may be able to design and make a beautiful mock-up of a project, but mass producing it on finishing equipment may not be feasible.

Scope

Information for this study was obtained by interviewing graphic arts industry professionals in the Rochester (NY) area. These professionals consisted of creative individuals/designers who are involved in the digital file setup/design of projects that require printing and finishing. Professionals at finishing companies and printing companies that handle finishing were also interviewed. According to *Binding, Finishing, and Mailing: The Final Word,* "finishing" is defined as "All postpress operations, including folding, trimming, assembling sections, and specialized tasks, such as die-cutting and foil stamping" (Tedesco, 1999, p.275). The entire graphic arts workflow,

from project conception to completion of a printed/finished project was examined, with a focus on education and communication.

Objective

The goal of this study was to investigate the problems in the graphic arts industry and examine the sources of those problems. Determining that a problem does exist and evaluating its causes is an important step toward finding a solution. This study examines how communication and education affect workflow variables such as time, money, and company resources. This research project could be used to facilitate and simplify the production process, increase efficiency and quality, and encourage growth and profitability in design and printing/finishing.

Reasons for Interest

In the following text, the "researcher" is Melissa A. Lyon. The researcher initially became interested in finishing after hearing a lecture by Tim Perkins, an experienced Rochester book binder. Mr. Perkins believes that when working on a project, a great place for designers to start is actually at the end of the workflow. Finishing, although it is one of the last steps in the production process, should be considered and well-planned out in the beginning, before designs are created. Finishing converts a printed piece into a durable, functional, sellable product. If designers are knowledgeable about the different finishing processes, they may be able to ask the right questions and create more accurate digital files so that their projects can be produced smoothly and economically.

The researcher graduated from Rochester Institute of Technology (RIT) with a BFA in Graphic Design. The researcher decided to pursue a Master's degree from the School of Print Media in Graphic Arts Publishing in order to become more knowledgeable about the entire graphic arts workflow, including finishing. The researcher believes that this knowledge, which was not included in the core curriculum requirements of the RIT Graphic Design program, is essential to designers.

As someone who is passionate about the graphic arts industry, the researcher believes that it is important to be a positive influence on its development and progress. Finishing seems to be an area that is overlooked and needs to be emphasized more in the design community. Employers value individuals that are knowledgeable about the graphic arts workflow from conception to fulfillment and respect those who strive to improve its processes.

Chapter 2

A Review of the Literature in the Field

Industry Overview

The graphic arts industry has experienced remarkable technological advancements over the past twenty-five years, mostly due to computerization. The trade media has focused most of its attention on developments in press and prepress, while improvements in binding and finishing have been greatly overlooked (Tedesco, 1999). The lack of published material and resources focusing on finishing demonstrates the deficiencies within the industry regarding this topic.

In the past, the bindery was believed to be the production bottleneck. The bindery was held responsible when jobs were late, folds did not line up or bindings fell apart. Today, customers and printers are incorporating finishing needs into the beginning planning stages of a project. Printers are including simple finishing procedures such as folding, stitching and trimming as part of their in-house (within their printing facility) services. More complex and specialized operations are outsourced to finishing facilities such as trade binderies, with binders who offer the knowledge, skills and equipment to complete these sophisticated projects (Tedesco, 1999).

Development trends in finishing include the increase of equipment speeds, the introduction of new materials and the use of materials handling systems, and the implementation of computer control and automated machine setups (Birkenshaw, 1995).

People have known for some time that finishing makes a printed product what it is. This statement is truer than ever with the increase of available finishing procedures. Companies are realizing that finishing can be utilized to differentiate their products from others. In publications such as magazines, run lengths are decreasing while the number of magazines produced increases. The subject matter is increasingly about specialist interests. Selective binding and personalization are used to match the interest areas of the reader. Finishing techniques can be used to create products tailored to a reader's area of interest. This decreases the overload of information received by that person, saving them time and energy. It also provides a way for print products to compete with increasing amounts of electronic media (Birkenshaw, 1995). Pira (2003) states, "The arrival of the internet and worldwide web means that print now has real competition from an alternative media for the permanent publication of information" (p. 2). With increasing competition from other media channels, it is even more important to be able to use finishing as a distinguishing and cost-saving method.

Finishing can also be utilized to distinguish a printed product from other printed materials. Advertisers and designers can choose special color effects, inks, foil stamping, die-cutting and folding to create eye-catching products that stand out from the crowd. At a time when competition is intense, available value-added finishing methods allow printers and finishers to increase profits (Birkenshaw, 1995).

Roles in the industry

Designers

According to the Print and Graphics Scholarship Foundation (2001), graphic designers are responsible for setting up the styles of projects and planning for projects to be printed. Graphic designers primarily use the computer as a tool to create designs. It is also important for them to be artistic, detail-oriented and color-conscious.

The Print and Graphics Scholarship Foundation (2001) discusses two other related careers labeled "illustrator" and "page-layout artist." Illustrators use their artistic talent and knowledge of composition to create drawings, charts and other graphics to correspond with text. Some illustrators use traditional drawing tools, while others use software programs such as Adobe Photoshop or Adobe Illustrator to create illustrations. Page-layout artists prepare projects for production and use computers to compile artwork and text together based on designers' layouts. However, with the introduction of desktop publishing, the jobs of the graphic designer, illustrator and page-layout artist are often all performed by the same person.

Printers

According to the Print and Graphics Scholarship Foundation (2001), press operators run the printing presses that apply ink to paper. They should be knowledgeable about computers and machine capabilities. Larger printers have automated bindery processes.

Printers are an important part of the process because they work directly with outside binderies and finishers to complete projects. Many printers are able to handle simple finishing procedures in-house.

Finishers

Most products require finishing after they are printed and before they are ready to be used by the consumer. Some printers have in-house finishing, but because of product diversity, most finishing is handled by outside binderies (Pira, 2003).

The Print and Graphics Scholarship Foundation (2001) discusses one type of finishing career entitled "Bindery worker." Bindery workers need to be knowledgeable about machine capabilities in order to properly complete finishing tasks such as the cutting, folding, gathering, trimming, and binding of printed projects.

Other specialized finishing procedures completed by finishers include die-cutting, applying coatings, embossing, debossing, foil stamping, laminating, tabbing, indexing, polybagging, gluing and producing point-of-purchase displays.

Other important related careers

The Print and Graphics Scholarship Foundation (2001) lists other related careers important in the graphic communications industry and in the graphic arts workflow. These careers include print buyers, estimators, customer service representatives, sales representatives and electronic prepress technicians.

Print buyers are the initial clients who purchase print products. Print buyers ask designers, writers, photographers and printers to bid on a job. They choose vendors based on factors such as project cost, quality and turnaround time.

Estimators calculate the cost of projects based on discussions with print buyers. Printing companies use these numbers to bid on jobs.

Once jobs enter printing companies, customer service representatives (CSR's) work as liaisons between printers and customers to answer questions or handle problems. CSR's should be knowledgeable about print production processes in order to communicate information to customers.

Sales representatives, often called "sales reps" are hired by printing companies to seek out and work with clients or customers. Sales reps work with customers to find cost-effective printing solutions.

Electronic prepress technicians use powerful computers to scan images, repair files, create traps and impositions, output film and plates and preflight files to ensure there will not be problems with variables such as fonts or images when projects are printed (Print and Graphics Scholarship Foundation, 2001).

A crucial part of the graphic arts industry is distribution. Products can be beautifully printed and bound, but if they do not reach consumers, they are useless. Today, direct mail is still the best way to deliver large amounts of printed products. Designers, printers and finishers need to be aware of postal concerns and United States Postal Service (USPS) rules and regulations. Graphic arts industry professionals can save money by finding the right mailing partner (Tedesco, 1999). A Mailpiece Design Analyst is someone who works at the USPS and provides mailing advice to industry

professionals. Mailpiece Design Analysts work with designers to ensure projects can be mailed properly and cost-effectively.

Designers' Finishing Knowledge

Tedesco (1999) states, "Despite the critical importance of the final stage in the printing process, bindery operations have remained the least understood and unfortunately have rarely been considered when jobs are planned and quoted" (Introduction).

Designers are educated in school about designing on computers, but often have little knowledge about how to properly design for finishing. Graphic designers need to be knowledgeable about finishing possibilities in order to grow professionally and become more effective designers (Tedesco, 1999).

Designers possess the power of selection, and appropriate project choices should be based on knowledge of materials, processes, end use and budget. Experience helps designers to make the correct choices, but reading about finishing provides designers with the available options (Pipes, 2005).

Knowledge of the entire print production process will help designers' projects to succeed on a technical level (Pipes, 2005). In order to properly set up digital files, designers must understand the five main stages of the workflow which include planning, design, prepress, presswork and postpress. Although finishing occurs after a job has been printed, the specifics of each operation need to be considered in the planning, design and production stages (Pace 2002).

According to Aldrich-Ruenzel (1990), intelligent graphic designers think about bindery operations at the start of their projects for multiple reasons, including the effects of finishing on job cost and appearance. Also, if designers choose incorrect bindery methods, job functionality can decrease.

Because Witkowski (2002) saw a gap in designers' knowledge of finishing, particularly folding, she created a guide entitled *Fold: The Professional's Guide to Folding.* Witkowski realized that faster, more efficient design and finishing technological advancements result in shorter production schedules. Consequently, graphic arts professionals have little time to research finishing options. Both designers and printers are taking on more and more production and finishing responsibilities as the line blurs between the two fields. Witkowski's guide was created to help industry professionals make educated decisions about folding limitations, formats and options. However, Witkowski warns the guide is only a reference and allowances may vary depending on paper choice and bindery equipment.

Printers' Finishing Knowledge

It is crucial for both designers and printers to have finishing knowledge. According to Tedesco (1999), "Binding and finishing knowledge is an under-represented skill set in the printing community and those with a good command of these processes stand apart from the crowd (Preface)."

Communication Flow

Each person in the graphic arts workflow needs to communicate properly in order to increase profits and decrease negative outcomes. Tedesco (1999) states that often in the graphic arts industry, the lack of clear communication has negatively affected the production process. Tedesco stresses the importance of bindery workers knowing the right questions to ask.

Pipes (2005) states that good graphic designers are both artists and craftspeople and can communicate cost-effectively with intelligence, economy and grace.

Witkowski (2002) states that for best finishing results, designers should institute good communication with printers or binderies and discuss specifics at the beginning of projects.

Chapter 3

Research Questions

This thesis will explore the following questions:

1. Are designers educated about finishing in schools?
2. Do designers have places to go to become educated about finishing?
3. Do designers learn about finishing throughout their careers?
4. Do designers understand and have accurate expectations for finishing machine capabilities and material limitations?
5. Are designers aware that design layout interfaces inaccurately represent finishing processes, capabilities and limitations?
6. Do designers focus enough on the functionality/safety/distribution of a project?
7. Do designers know the right questions to ask?
8. Do designers have an accurate view of their own printing/finishing knowledge?
9. Is there opportunity for communication/education to exist in the graphic arts workflow?
10. What are the degrees of separation between designers and finishers?
11. Do printers/finishers educate designers?
12. Is there communication/feedback after projects are completed?
13. What happens when communication/education does not occur in the workflow?
14. What happens when communication/education does occur in the workflow?

The objective of this research is to:

1. Understand designers' finishing knowledge
2. Explore the communication flow between designers and finishing professionals

Chapter 4

The Methodology

Preliminary Interviews

Initial research was collected from books and other reference materials as well as from a few in-depth interviews in order to learn more about designers' and printers'/finishers' views on the graphic arts industry. Two finishers and one designer were interviewed. The interviews were fairly structured, although deviations from the initial questions were not discouraged. The purpose of the preliminary interviews was to obtain a better understanding of the industry and the viewpoints of professionals in that industry. This information helped formulate questions used in additional interviews with experienced designers and printers/finishers.

The preliminary designer interview subject worked for twelve years in the graphic arts industry. The designer acquired knowledge of graphic arts processes through experience, and believes most designers obtain on-the-job training and often learn about production and finishing concerns through trial and error. Because technology and production processes change so quickly, the designer feels that printers should continually educate their clients, who are often design companies. The designer stated that it would also be beneficial for designers to be required to fill out electronic job tickets that would accompany the digital project files they give to printers. Finishers could be helpful by providing designers with digital templates for particular finishing operations. The designer stated that a definite communication and knowledge gap exists

between finishing and design. Often designers are unaware of the existence of an external finishing provider because the finishing process is outsourced by the printer.

The two finishing professionals who were interviewed had exhaustive backgrounds in bindery and finishing education, processes and equipment. They provided insight into the roles they play and situations they encounter in the graphic arts environment. They believe many of the design problems that occur could be avoided if finishers were able to approve design layouts before the printing process. However, as finishers, they interact with printers more than designers. When finishing problems occur, designers are not informed unless they are so severe that projects need to be reprinted. Designers frequently lack the information required to prepare digital files correctly for finishing procedures.

The two finishers would like designers/creative professionals to ask them for advice, especially in the beginning stages of projects. It is always advantageous to ask about machine specifics/capabilities and the effects of certain material combinations. Decisions designers make in the initial stages of project development and digital file creation can affect project cost, time and efficiency.

Interview Questions

Next, questions were generated to use in interviews with a larger number of design and printing/finishing professionals. The thesis committee made two revisions to the interview questions. The questions were then reviewed by psychologist, Dr. Nicholas DiFonzo, who provided his expert opinion. The questions were worded in a way to avoid

adding a bias to the respondents' answers. The eleven interview questions for printers/finishers and for designers are shown in Appendix A.

Interview Process and Resources

Ten printing/finishing professionals and twelve professionals from the design community in the Rochester (NY) area were interviewed at their respective places of work. The interview subjects received the questions in advance. A voice recorder was used in order to document the interviews. The interview subjects were found through professional references.

The resources needed for conducting the interviews included a telephone or e-mail to contact the interview subjects, transportation to the interview location, a digital recorder to capture the data, a printer and ink to print out the interview questions, a computer and computer software to compute the data and note cards to organize the data. Each interview took approximately one hour to complete. Time was spent traveling to the interview locations as well as transcribing and reviewing the recorded interviews.

Data Analysis Methods

The interview results were organized based on common themes. Averages were computed mathematically for questions involving numbered responses and percentages. Charts were created using Microsoft Excel.

Chapter 5

The Results

For confidentiality purposes, the interview subjects are referred to numerically, such as F-1 through F-10 for printers/finishers and D-1 through D-12 for designers. For extended results data, refer to Appendix B.

Designers' Finishing Knowledge

Finishing knowledge ratings

On a one to ten scale, ten being very knowledgeable, designers gave themselves an average score of seven. Many designers stated that they learned about finishing through experience and time in the industry.

On a one to ten scale, ten being very knowledgeable, printers/finishers gave designers' finishing knowledge an average score of 5.1. Most of the printers/finishers stated that designers do not understand finishing, view it incorrectly, and only focus on the initial, design side of the workflow.

Finishing education suggestions/finishing resources

Many of the designers would like printers/finishers to spend more time educating them about printing/finishing. Printers/finishers suggested designers should be educated about finishing materials and processes, project cost, better communication, functionality and distribution and should acquire experience at a finishing company. A majority of the

designers, as well as printers/finishers, found *The Professional's Guide to Folding* by Trish Witkowski a helpful resource and saw a need for better-defined finishing standards.

Communication Flow between Designers and Finishing Professionals

Graphic arts workflow/relationships

The flow of information with a print project in the graphic arts workflow can go through the initial client, an account manager, a designer, a mechanical department/ production manager (may or may not be involved depending on company size), a printing sales representative, a prepress department, a printer and a finisher (not included if finishing is completed by the printer). Some projects then go directly to the client, but most involve distribution and mailing.

Finishers, who only handle finishing, work directly with printers. Printers, with in-house finishing capabilities, work with the initial customers, designers and finishers. However, printers stated that they usually acquire jobs after designs have been completed. They rarely have a chance to communicate with designers early in the workflow. Designers' first interactions with printers are usually at press approvals.

Most of the printers/finishers thought finishing considerations were not given enough thought in the beginning stages of project workflows. The consequences included: lost time and money, customer disappointments, substandard products and missed opportunities for creativity.

Designers stated that they only work with printers/finishers who provide good experiences and accurate information. They also stated that printers/finishers supply them with the correct information an average of 90.75% of the time. On a scale from one to

ten, ten being very knowledgeable, designers gave printers'/finishers' knowledge of design an average score of 7.9.

Time printers/finishers spend communicating with/educating designers

According to both the printers/finishers and designers, printers/finishers spend, on average, approximately one hour, or 2.75%, of their forty hour week, educating designers. Finishers try to educate printers and hope this information is passed on to designers through the printers.

Specific project workflow examples

Most of the positive instances described by printers/finishers and designers involved communication and education in the early stages of the project workflow. In some of the instances, the designer already had the necessary production knowledge. However, these instances were rare. In most of the hindering instances described, there was an absence of communication and education. There was also a lack of production knowledge on the part of designers, printers and finishers.

Chapter 6

Summary and Conclusions

The research objectives were to understand designers' finishing knowledge and to explore the communication flow between designers and finishing professionals. Research gathered for this study supports the statements that designers lack finishing knowledge and a gap exists in the communication flow between designers and finishers. The following statements address these conclusions in more detail.

Designers Lack Finishing Knowledge

Designers are not educated about finishing in schools.

Designers' education often begins with academic studies, which usually entails a Graphic Design undergraduate degree from a college or university. The interview subjects were not educated about finishing as part of their traditional Graphic Design college curriculum. Most beginning designers do not have enough finishing knowledge to make digital file preparation decisions for production issues.

When D-8 graduated from college, she stated that her knowledge rating (on a scale of one to ten, ten being the highest) of finishing technologies and operations was zero. She stated, "I did not know anything."

D-11 stated, "When I graduated from RIT with a Graphic Design undergraduate degree, my knowledge level of finishing was probably a three on your scale (on a scale of one to ten, ten being the highest). When I was there, fifteen years ago, there was not an

overlap of the colleges. We did not have group projects with the school of photography or school of printing, although there was all that knowledge there, which I think would have helped my education."

D-6, who recently graduated with a Graphic Design undergraduate degree, stated that he did not learn anything in college design classes about production and printing. According to him, none of the core design classes addressed issues of printing or finishing production processes.

Designers do not have many places to go to become educated about finishing.

F-1 stated, "It is unfortunate that designers do not have very many places to go for education in the print finishing area."

Designers do not learn about finishing throughout their careers.

Some interview subjects believed designers learn over time about printing/finishing, however, according to the designers' self-rated finishing knowledge, this is not the case. Figure 1. compares the designers' finishing knowledge with the number of years they have spent in the industry.

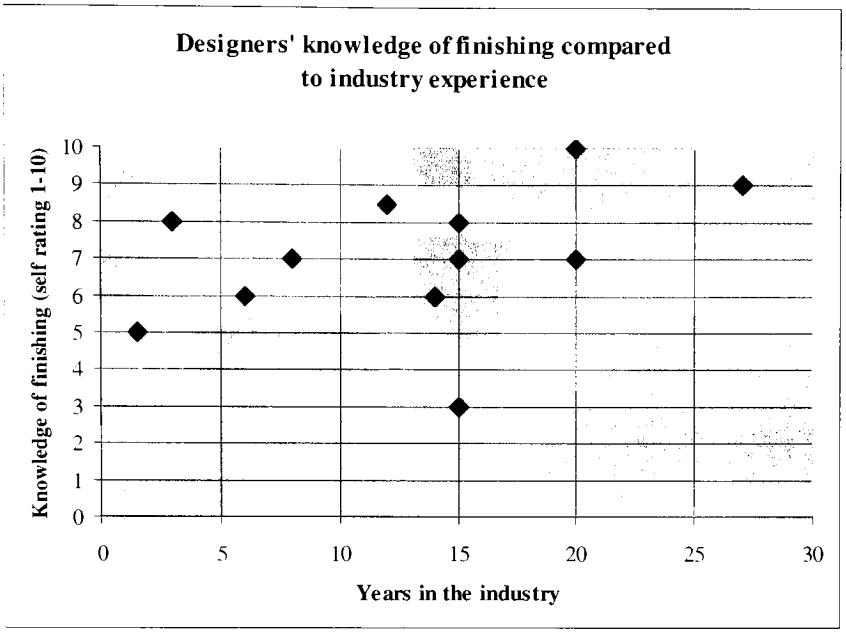


Figure 1. Designers' knowledge of finishing compared to industry experience

Figure 1. shows that the number of years designers have spent in the industry does not directly correlate with their self-rating of finishing knowledge. The points are scattered throughout without a definite pattern. The most frequent point is seven, which is shared by designers who have eight, fifteen and twenty years experience in the industry. The designer with the lowest plotted point, with a knowledge level of three, has fifteen years of industry experience. This randomness seems to indicate that designers are not learning about finishing throughout their careers. Their printers/finishers may not be educating them. This inhibits their knowledge growth and improvement for future projects.

Printers/finishers inaccurately think more years in the industry equals more knowledge. They also make assumptions about the people who work with designers at design companies.

D4, who has twenty years in the graphic arts industry, stated, "I need to learn more about finishing."

F-9 stated, "Designers' knowledge of finishing comes down to how long they have been in the industry. Hopefully, designers have someone on their staff, such as the production manager, who has that extensive knowledge of finishing."

Designers do not understand, nor do they have accurate expectations for finishing machine capabilities and material limitations.

Designers are often unaware of what happens to a job after it leaves their hands. They do not know what questions to ask even if they are able to contact finishers. Designers expect to be informed about certain finishing specifications, while printers/finishers assume designers already possess the necessary information.

D-2 stated, "I get by, but I am not really familiar with special finishing processes like special binding or something besides a saddle-stitched or perfect bound book. Also I do not know a lot about panels, gluing or how much space to build in for the binding on a spiral or perfect bound book. We are not told that information. We do not know what size to make the panels for a roll fold. We guess."

F-1 stated, "Designers consistently build elements into their graphics which require precision and accuracy beyond the tolerance of our normal variation in our processes. They often get disappointed when things do not come out the way they envision them to be in the perfect world. 75% of the electronic media that comes into our factory still requires retrofit after we receive it from people who should be

knowledgeable enough to have created the files properly. It is a snafu in our system right now. This takes time and adds unnecessary dollars to the cost of the project."

F-6 stated, "Designers might be aware that something can be done, but they do not know the limits of certain formats and expense relationships."

Designers are not aware that design layout interfaces inaccurately represent finishing processes, capabilities and limitations.

There is a significant difference between what designers see on computer screens while working within layout programs and the physical completed products. D-10 stated, "There is definitely a difference between what you see on the computer and what is in real life. The trick is to understand the computer is just a tool. It is there so you can manipulate things that exist in real life. After a while you get used to knowing what is represented on the computer and you know what it is going to look like in real life. However, that is an acquired skill and takes a little time to learn."

F-9 stated, "Sometimes we will have trickier files and designers do not know what is going on because the flat view (on the computer screen or on a color proof) is a lot different than the finished one. We might have to go back in the file and label things like the front cover, back cover, front side or bottom panel. This could be confusing to someone who cannot visualize the folding process in their mind, which gets pretty complicated sometimes."

Designers do not focus enough on the functionality/safety/distribution of a project.

F-10 stated, "Designers do not pay a lot of attention to the actual workability of a job. They are so focused on the creative end of the project, that sometimes the results are an absolutely impossible job that we then have to either quote or actually produce."

On a project involving bottle neck hangers (the tags that hang around the neck of a bottle), D-5 stated, "I did not have any idea what I was doing and we did not have a very good reference for doing it, so I was flying by the seat of my pants. I did not have any paper samples to print on. I did not know how the product was going to work on a practical level."

Sometimes designers do not know the right questions to ask.

D-4 stated, "Sometimes I do not know the right questions to ask or if a designer asks me a finishing question, I would like to know the answer upfront."

Designers think they know more about finishing than printers and finishers say they do.

Figure 2. compares designers' and printers'/finishers' ratings of designers' knowledge of finishing.

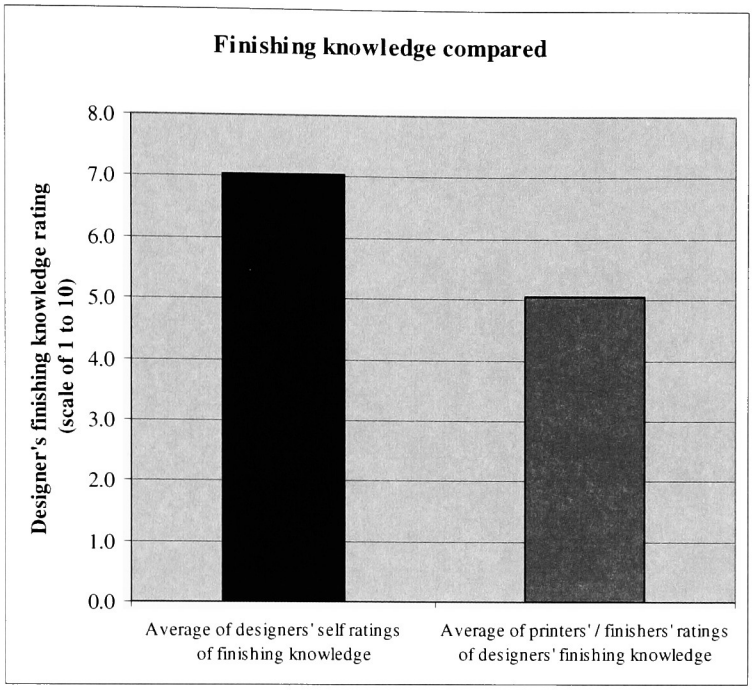


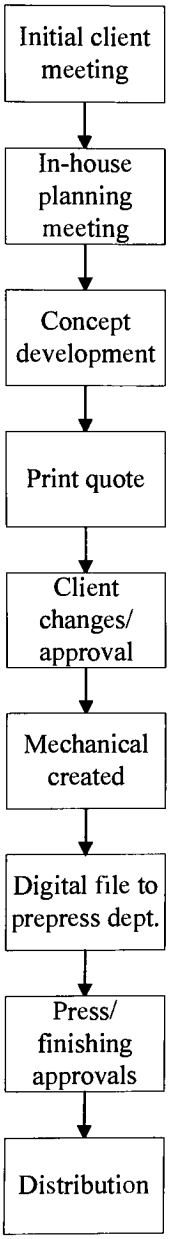
Figure 2. Finishing knowledge compared

Figure 2. shows that designers give themselves on average, a higher rating (7) of finishing knowledge than printers/finishers rate their knowledge (5.1), with a two point difference (20%) between the two ratings. This difference is significant. It indicates that designers may not know that they lack finishing knowledge, and are unaware of their need for more education.

Designers may feel confident about their finishing decisions and document setup because printers/finishers have not given them reason to doubt their choices. Printers/finishers may fear that if they attribute production problems to design decisions or say anything negative to their design clients, they could lose those clients to their competition.

A Gap Exists in the Communication Flow between Designers and Finishers

Very little opportunity for communication/education exists in the current graphic arts workflow.



An account executive from the creative company discusses the project with the client paying for the job. They draw up a creative brief (what the project entails, parameters and the budget).

A team is called together (usually a production person, an art director, and a copywriter). They discuss the creative brief. Everyone understands their role in the project. The designer and writer work on ideas that are presented internally and the best ones are shown to the client who picks one of the comps.

Photography is planned, copy is written and layouts are started.

The design company or the client will contact printer(s) and get a print quote(s).

Internal client revisions and approvals take place.

Some companies have an internal mechanical department that prepares the digital files for the press.

The mechanical is sent to the printer, sometimes accompanied by a proof printed by the creative company. Sometimes the client is given the file, who hands it off to the printer, where the prepress department makes alterations to the file.

A designer or production manager signs off on the proof from the printer and sometimes will sign the press approval. The printer or finisher takes care of the finishing, which is often an invisible process to the designer. In rare cases with complex finishing, the designer or production manager attends a finishing approval.

The designer double-checks the project on the day it is supposed to be delivered to the client to make sure everything arrived and is in good shape. Many projects need to be distributed to the public as well, such as through mailing.

Figure 3. Designers' current workflow (varies depending on type of project and companies involved)

When the designers were describing their workflows, most of them stopped at the stage of handing digital files to printers. They needed to be prompted to discuss the finishing side of the workflow. They have not scheduled time in their workflows for communication with finishers. Designers do not feel that it is their responsibility to be concerned about finishing considerations. They think that it is the finishers' responsibility to produce jobs correctly. Designers think they are too busy to be concerned with the finishing aspect of the project.

F-4 stated, "Designers think everything is upfront and once they have decided on the inks and the paper, the rest of the workflow just happens. I do not think they take into consideration the problems that they are going to face concerning finishing. Very rarely do printers or designers give us something and ask us if it will work. Usually they give us the project and tell us how they expect it to look when completed."

D-1 stated, "It is the finishers' responsibility to make sure the project is going to work on their equipment and actually fold properly."

D-2 stated, "Sometimes we are able to meet with the printer multiple times before handing off the project to them. In that case, we can make changes, but usually we are not able to work the time coordinating with the printer into our revision cycle with the client. It is usually kind of an afterthought."

There are often several degrees of separation between designers and finishers.

In the graphic arts workflow, a very real physical distance exists between a designer who is designing a job and a finisher who is finishing that job, especially when

the finishing is outsourced by the printer. The degrees of separation or number of people between the two may include a design production manager, an in-house mechanical department, maybe even the client buying the job, a printing sales representative, prepress department and press department. Therefore, because this physical interaction between designers and finishers is limited, it often inhibits communication between the two groups.

F-7 stated, "The problem is that it is difficult for designers to get advice sometimes on finishing because the printer who prints the job may not be the finisher. Sometimes that printer may subcontract that finishing out to another company."

F-10 stated, "We do not know what the designer is going to do and that is the problem. We have to quote something assuming that it is going to be normal and it comes in something a little bit off the wall. Very often we do not see a proof before quoting the job. We just try to make the project work."

Printers/finishers do not spend enough time communicating with/educating designers.

According to question number ten for designers and question number four for printers/finishers, the average amount of time printers/finishers educate designers is about an hour a week or 2.75% of the week. About 80% of the designers stated that printers/finishers spend less than 2% of the week educating them.

D-2 stated that printers/finishers "do not take the time to teach us at all about how to avoid things, or trouble shoot or anticipate problems. They do not spend any time educating us."

F-4 stated, "We do not really spend much time educating designers because we do not contact them and they do not ask. There is quite a distance between designers and finishers which is not really right." This comment is unfortunate because finishers say they do not educate designers because designers do not ask questions. However, designers do not even know what questions to ask and sometimes are unaware they are doing something wrong.

Although they were not directly interviewed, other departments within the printing company such as the prepress or file preparation (prep) department may spend more time educating designers than printing salesmen. The prep department may spend time educating designers about proper digital file setup for printing.

F-8 stated, "Since we deal with the most experienced designers, we might only spend an hour a week educating them. However, our prep department actually spends a lot of time educating designers on digital file setup. The prep department will actually call the customer and instruct them to rework the digital file so that it can properly go through our workflow."

After a project is completed, no communication/feedback occurs.

Although designers see an error in the final product after it has been produced, they do not receive feedback from the printers/finishers and do not understand the cause of the problem. Designers sometimes are shown a hand-made sample of the job that may not represent the entire mechanical production of the pieces. This lack of communication as well as lack of time spent educating designers may be contributing factors as to the reasons designers are not learning about printing/finishing throughout their careers.

D-5 stated, "Once the project is handed off to our vendor, it is forgotten. One of our vendors will give us samples after the job is finished. Unfortunately, we do not get to sign off on proofs. It is usually a surprise when we see the final piece completed."

F-4 stated, "I think a lot of binderies will do something by hand and give designers samples, but the bulk of the job looks bad (produced with machines), and maybe the designers do not even know it because they get these hand-made samples that are so nice."

D-4 stated, "It could be that printers will pick out six good samples and send them to the client. The client may think that all of the pieces look like the samples, but the other fifty thousand out on the truck may not look as good as those."

When communication/education does not occur in the workflow, negative results follow.

Problems arise when effective communication does not occur in the initial stages of the workflow, and the results are frustration, a loss of quality and wasted time, money and resources. F-9 stated, "The ability to go back and forth and work with each other is an ideal situation, but sometimes I never talk to designers, so I have no idea what is going to happen."

In some instances, printers/finishers made decisions without communicating the changes to designers. D-10 stated, "We requested offset printing and it came back as a digital printing process. It saved us money, but it was not money we were looking to save. We wanted to spend a little bit extra to make this project look nicer. That is a little bit off-putting. I understood that he was coming from a place where he thought he could

anticipate my needs, which was OK. However, over time this developed into a pattern of the printer making his own decisions independently of what we were asking for."

When designers do not listen to the advice communicated to them by printers/finishers, negative results follow.

In some instances, the printers/finishers attempted to communicate with designers and gave them advice, but the designers were not willing to listen, resulting in a substandard product.

F-7 stated, "Generally a designer will design a piece that is overly complicated because they have one element of the design that they want to achieve in a particular way. There is more than one way to skin a cat. A particular designer was insistent on a certain type of paper for his project and was not willing to listen to our advice on another type of paper that would have printed the job better."

F-9 stated, "We will sometimes run into people that are not open to ask us what we think is best for a project. It is frustrating because the designers or printers usually just stubbornly tell us what they want."

When communication/education does occur in the workflow, positive results follow.

In some cases, the printer is able to see the design beforehand and make suggestions, however this is very rare. In those positive cases, the outcomes were increased efficiency and innovation, and saved money, time and resources.

It was helpful for a designer to give F-6 a PDF of a digital file early in the process. Necessary adjustments could be made regarding the graphics positioning and

envelope flaps. This situation is preferred over the designer providing the printer with the file and the envelope selection last minute. This would have limited the production options because often there is a tight time frame to work within. F-6 stated, "We like to interface with the designers at an early stage to give them advice, but that circumstance is very rare."

F-7 stated, "Sometimes early on in the process, I'll get a call from a designer saying that he has an idea that he would like to try. That situation is good. However, it does not happen very often."

Other Findings

Printers/finishers do not have an accurate view of designers' finishing education in school.

Printers/finishers assume beginning designers know the basic finishing processes. However, this is not the case according to the research data. F-8 stated, "Most designers, even the ones that are fresh out of school, are experienced and educated enough to know if a pocket folder will work. However, they should ask for help when creating something rare or brand new like a new box that has not been done before."

Company size is not directly related to designers' finishing knowledge.

The size of the designer's company is not directly related to that designer's knowledge level of finishing. Both large and small companies have benefits and draw backs in terms of a designer's knowledge of printing/finishing.

Larger design companies sometimes can afford to have a production person on staff. Designers at these companies rely on their production manager for knowledge about finishing processes. F-7 stated, "You need to remember that the bigger the agency is, the more specialized the people there become, and in a large agency, some designers do nothing but design. Those designers talk to their production people who take care of printing and finishing issues." Medium sized companies sometimes use a contract production manager. Smaller companies often cannot afford a production person on staff. Designers at smaller companies often do not have time to research or talk to printers or finishers about production issues. In the past, designers were paid for the time spent talking with printers, but now they are often not paid for this time.

Printers/finishers know more about design than designers know about finishing.

Figure 4. compares how designers rate printers'/finishers' design knowledge with how printers/finishers rate designers' finishing knowledge.

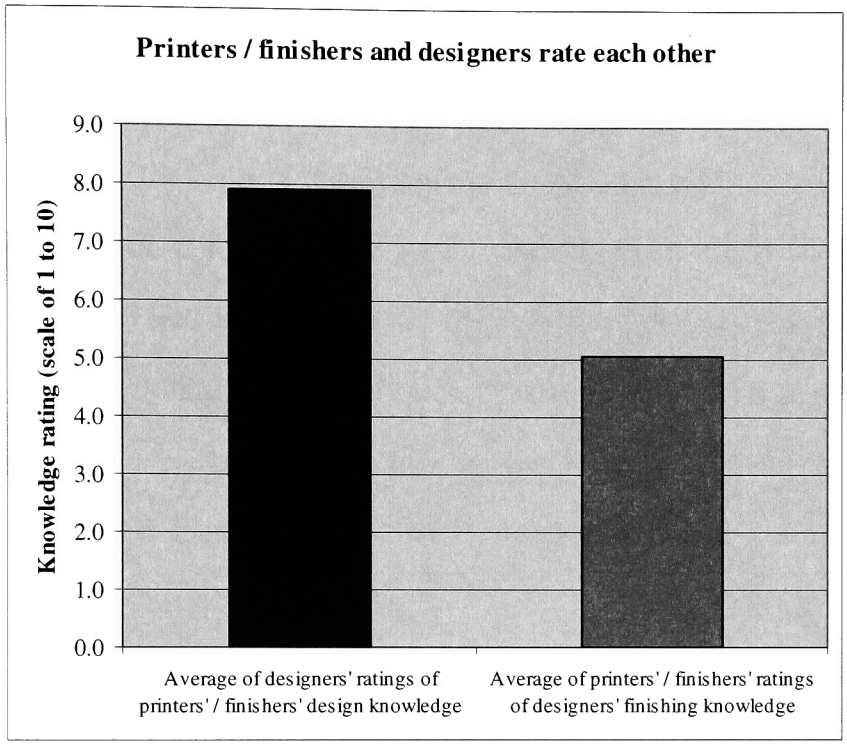


Figure 4. Printers/finishers and designers rate each other

Figure 4. shows that designers gave printers/finishers, on average, a higher design knowledge rating (7.9) than printers'/finishers' rated designers' knowledge of finishing (5). This two point (20%) difference is significant. One conclusion is that designers do not know as much about finishing as printers/finishers know about design. This reinforces designers' need for education. D-9 stated, "Finishers might know more about us than we know about them. That is the way I look at it."

Printers often do not have enough finishing knowledge.

According to the research data, designers' knowledge of finishing is limited. They depend on the knowledge of their printers, who may not be knowledgeable themselves about the finishing industry, especially about more complex finishing that is out-sourced.

F-5 stated, "Designers will come up with weird designs and the printer will print it without calling us in a lot of cases. Because of some of the designs, we have to assemble things by hand that could be run automatically if they would just touch base with us. Designers have no idea of our capabilities and most printers do not either and they rarely call us."

F-8 stated, "Designers do not know enough and they do not have time to learn about finishing. They are short-staffed because of the economy and they just do not have the time, so they lean on us, the printer, to help them out. We may not know enough either, so it is a learning process for both of us sometimes."

F-4 stated, "I am assuming that there are discussions between printers and designers about finishing production issues. A lot of printers only handle simple operations like stitching and folding, but sometimes trouble occurs with more complex finishing they do not handle as often."

Printers and finishers do not always communicate with each other.

F-5 stated, "When we quote a job for folding and stitching, neither the designer nor the printer tells us whether or not the design has critical crossovers (art on opposing pages that needs to match up). The printers tell us that they do not have that information before receiving the job either. If the job does have critical crossovers then the cutting

and folding equipment has to run at a slower speed. Years ago we were paid for that extra time, but that does not happen anymore."

There is a gray area of responsibility in the workflow. Many assumptions are made that should not be.

It is unclear where responsibilities lie in regard to setting up files correctly for push out or creep, trapping and creating die-lines. Some people think it is the prepress departments'/printers' job while others believe the responsibility lies with designers. Regardless of responsibility, communication about these processes does not occur.

D-12 stated, "On this particular job, it was not my responsibility to know how to calculate all of the dimensions for panels folding into each other because the piece was very long and complex. It is the printer's and finisher's job to calculate those dimensions. They provided me with a die-line so the design could be functional."

D-3 stated, "On jobs that are saddle stitched, there is a problem where the pages closer to the center of the book are pushed out further than the outside pages. Then, when the book is trimmed all at once, sometimes part of the content is trimmed off. As a designer, I would not be responsible for making those file adjustments for the page push out or creep. The printers and finishers are knowledgeable about their machinery, so they should make those file adjustments. On this particular project, the printers did not move the pages and information was trimmed off."

Chapter 7

Recommendations

Since it is evident there is a need for better communication and education in the graphic arts workflow, what should be done next? Assumptions should not be made by anyone. Steps need to be made to increase education about finishing in design schools as well as to educate designers already in the industry. Printers need to become more knowledgeable about finishing procedures and operations. Communication is very important among everyone involved in the workflow, and the gap in communication between designers and printers/finishers needs to be decreased.

F-10 stated that it would be beneficial for both finishers and designers to learn more about each other. F-10 stated, "Designers are not trained enough in the actual production of the piece, and we are probably guilty of just the opposite. We are not trained enough in the creative end of the workflow. Everyone has their own little focus."

Graphic Design Curriculum Recommendations

Design students need to be educated in the area of finishing so they are able to ask the right questions and communicate more effectively and comfortably with printers/finishers. Colleges and universities need to make printing/finishing a required part of the Graphic Design curriculum. Instructional classes, hands-on training and tours of production facilities are necessary. Teaching designers finishing terms and machine processes is important. It is also beneficial to show them specific project examples and

talk about the reasons they went wrong and discuss preventative actions. Teachers need to illustrate the effects of machine and material properties and processes on design and project cost. For a more complete list of suggested curriculum concepts and student exercises, see Appendix C.

Recommendations for Designers

Designers should take a detailed tour of a printing and finishing facility or even spend time working at one.

This will help designers visualize or make the connection between what they see on their layout software program versus how something is produced.

Designers need to consider finishing machine/material capabilities and costs.

Designers need to know the limitations of finishing processes and materials such as paper and ink. With more knowledge about machine capabilities and limitations, designers can design more cost-effective projects. The cost per copy of a project can be decreased if that project can be produced using machines rather then assembled by hand. Designers can be more creative if they know project options and the costs of those options.

D-3 stated, "I depend a lot on either a production manager, who is much more knowledgeable than I am, or the actual printer to give me advice on finishing. Although, I have to know quite a bit about what can be done before I can design a piece. If you do not know what can be done, the project could turn into a big mess or become a terrible headache and you may have to start over."

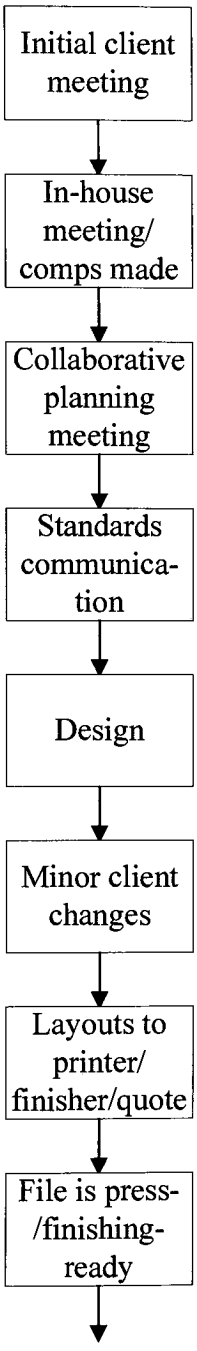
If designers are knowledgeable about materials and processes, it will be easier for them to know what questions to ask. Designers will also have a more accurate expectation of project results. F-1 stated that there are projects a few times a year that cannot be completed as they were envisioned by the designer. F-1 stated, "If that particular designer was better trained and educated in printing and finishing, he or she might be able to at least have an initial conversation about project expectations."

Designers need to consider project functionality, safety and distribution.

Designers should not only think about and feel responsible for the aesthetics of the piece, but also be involved in the utility and functionality of that job. If the project is going to be mailed, the designer needs to make sure the project meets postal regulations. D-3 stated, "You have to consider how the project will be mailed. It is important to make sure all the pieces nest or fit together properly and the response/reply cards meet postal regulations."

Designers should incorporate finishing into their project workflow.

Communication needs to take place throughout the workflow between designers, printers and finishers, especially in the beginning stages of the project, where decisions are vital in terms of efficiency, cost and quality. Extra time is spent in the initial stages, but it will definitely be worth it in the end. Designers should try to follow the suggested workflow shown in Figure 5.



An account executive from the creative company discusses the project with the client paying for the job. They draw up a creative brief (what the project entails, parameters and the budget).

A team is called together (a production person, an art director, and a copywriter). They discuss the creative brief. Everyone understands his/her role in the project. The designer and writer work on ideas/comps that are presented internally and the best ones are shown to the client who picks one of them.

A meeting is held involving the printers and finishers at the beginning stages of the project. A printer/finisher should be chosen before this meeting and should be sent a project description in order to be able to provide samples. (Designers choose a printer based on the project requirements and an approximate estimate made by the printer/finisher based on the design comps.)

The printers and finishers need to send the designers a specific set of standards to follow based on the format chosen during the collaborative planning meeting. If necessary, the printer and finisher work together to create a digital file that the designer can design within, sometimes containing a die-line.

Based on the comp chosen earlier by the client and the advice and/or files provided by the printer/finisher, the project is designed (photography is taken, copy is written and layouts are created).

Minor client revisions and approvals take place.

The designer sends the printer/finisher a mock-up of the completed project as well as the layout in a digital file. The printer and finisher then make final suggestions so that the project can be completed efficiently, accurately and cost-effectively on the equipment. Because the printer and finisher have been involved throughout the process, they can accurately calculate a quote that should not deviate much from the approximate quote estimate made earlier. The designer should also make sure the design meets distribution standards.

The layout is adjusted based on the printers/finishers final suggestions. The digital file is sent to the printing company's prepress department. Because of the planning previously in the workflow, there should not be many alterations made to the file by the prepress department.

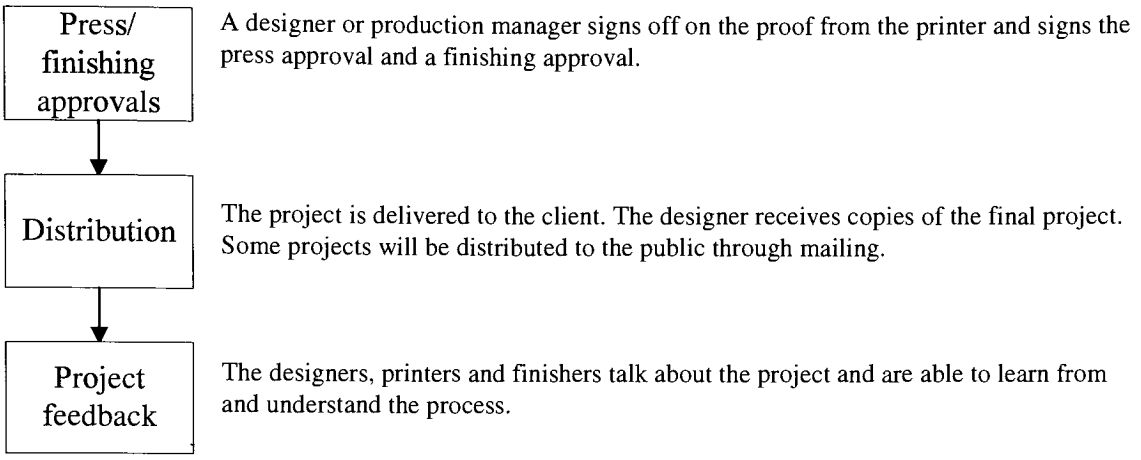


Figure 5. Recommended project workflow

The more questions asked and the more communication that occurs, the better the chances are for projects to be successful. Designers also need to educate initial clients paying for the jobs on the importance of production meetings and time spent communicating with printers and finishers.

F-5 stated, "If it is a complex piece, then designers should have a meeting, which often depends on the customer and their time element, with the finisher and printer together to figure out the easiest way to tackle the project."

D-3 stated, "The huge key to a successful project is communication between the designer and the printer. It is a partnership once it gets past the conceptual stage and it is important to always keep printers in the loop as to what you want to accomplish. Designers need to be very clear and almost have to pretend that printers know nothing at all. This is the best approach because then you can make sure you cover all the bases because printers cannot read your mind and you might have something in mind that they are not aware of."

Designers should ask for digital files and die-lines.

Especially with more complex finishing projects, designers should ask finishers to help them create proper press-/finishing-ready files or ask them to provide files.

Designers need to determine their responsibilities for every project, at the start of each project by communicating with and involving printers/finishers in the initial stages of the workflow and asking questions before making file setup decisions.

It is necessary for designers to understand there is always room for improvement and opportunities to decrease waste and increase creativity. With so much competition in the printing industry, designers must remember that printers/finishers may be reluctant to make suggestions or reject projects because they know that designers can go to another provider.

Positive communication leads to trusting and respectful partnerships and relationships. It is beneficial for designers to make the first move when projects are beginning and involve the printers/finishers as soon as possible. By communicating with printers/finishers in the early stages of the process and allowing time in the workflow for suggested changes, they are increasing the chances of positive project results. Designers will benefit by getting a more cost-effective, quality project. Appendix D lists some important questions to keep in mind when talking to printers/finishers.

Designers should show a proof to the printer/finisher beforehand.

Designers need to build time into their workflow schedule to be able to show a comp or proof of the design to the printer and finisher and make changes based on their suggestions.

Designers should ask for project feedback.

Designers should ask printers/finishers for feedback, especially if the project was not completed as expected.

Important Note:

There are also other professionals (non-designers such as secretaries and other office workers) in the industry who design projects. It is imperative for these individuals to be educated about finishing and be able to communicate effectively with printers/finishers.

Recommendations for Printers/Finishers

Printers and printing salespeople need to know more about finishing operations.

Printers need to communicate with finishers and acquire as much knowledge as possible in the area of finishing.

Printers and printing salespeople need to consider finishing specifications when talking to designers and finishers.

Printers need to involve designers in the production process and facilitate communication between themselves, the designer and the finisher. Printers need to be clear and explicit about expectations and file formats.

Printers/Finishers need to spend time educating designers.

Printers/finishers should be available to educate designers and answer their questions.

Printers/Finishers need to be aware that neither experience nor the size of a creative company is linked to a designer's knowledge level of printing/finishing.

Printers/finishers should not assume that because someone has been at a design company for many years that they are knowledgeable about printing/finishing capabilities and operations and do not need to be educated. D-6 stated, "Printing reps have to be more perceptive in terms of knowing each designer's knowledge level."

Printers/Finishers need to provide designers with project samples or even create a visual guideline about their particular finishing processes/capabilities.

Finishers, along with providing digital files, should create visual tools such as physical handouts or web-based aids to help designers understand their particular finishing operations. When providing digital files or physical samples to designers, it is

important to clearly identify all parts of the aid. Printers/finishers need to show designers samples of successful or unsuccessful finished pieces.

Printers/finishers should offer project feedback

Printers/Finishers need to provide designers with as much feedback as possible after a project has been completed, so that if mistakes are made, designers are able to learn from those mistakes.

Recommendations for Further Investigation

- Explore the psychology behind the communication and education issues in the graphic arts workflow between designers and printers/finishers
- Develop this research into a case study
- Have simultaneous projects utilizing the current graphic arts workflow for one project and the recommended workflow for the other and compare the results
- Test the recommended workflow to discover how it affects project outcomes
- Complete a time study in printing studies with a checklist of classic design errors related to finishing, and find percentages for each type of error made
- Complete a statistical research analysis of costs/ramifications

Bibliography

Bibliography

Aldrich-Ruenzel, N. (Ed.). (1990). *Designer's Guide to Print Production.* New York: Watson-Guptill Publications, 138.

Birkenshaw, J. W. (1995). *Finishing for the Customer: A Literature Review.* Leatherhead: Pira International, 7, 8.

Pace, K. (2002). *Designer's Guide to Print Production.* Upper Saddle River: Prentice Hall, 1, 36.

Pipes, A. (2005). *Production for Graphic Designers* (4th ed.). New York: The Overlook Press, 11, 221.

Pira International. (2003). *The Print and Production Manual* (9th ed.). Leatherhead: Pira International Ltd, 2, 375.

Print and Graphics Scholarship Foundation. (2001). *Careers in Graphic Communications: A Counselor's Guide.* [Brochure]. Sewickley, PA: Print and Graphics Scholarship Foundation.

Tedesco, T. J. (1999). *Binding, Finishing, and Mailing: The Final Word.* Pittsburgh: GATF*Press*, Preface, Introduction, 25, 153, 157.

Witkowski, T. (2002). *The Professional's Guide to Folding.* Reisterstown: Finishing Experts Group, Inc, Preface.

Appendices

Appendix A

Appendix A

Interview Questions

Questions for designers

1. Please briefly describe your workflow process from concept through development to completion of a product. *(Including the people that you work with directly)*
2. Describe the role you think finishers play in the graphic arts workflow.
3. How would you describe your relationship with finishers? *(If you do not have a relationship with finishers, who do you have relationships with?)*
4. What percent of the time do you think your printers/finishers supply you with the correct information?
5. If you could change anything about your printers/finishers, what would it be?
6. On a scale from one to ten, ten being very knowledgeable, one being not at all knowledgeable, rate your printers'/finishers' knowledge of design or the design community.
7. Rate from one to ten, ten being very knowledgeable, one being not at all knowledgeable, your knowledge of finishing technologies and operations.
8. Think of an instance where a printer/finisher acted in a way that helped you do your job properly. Please describe this incident. Can you think of one more instance?
9. Think of an instance where a printer/finisher did something that hindered you from doing your job properly. Please describe this incident. Can you think of one more instance?
10. Do you think that you have learned a lot from the knowledge of your printers/finishers? Have they ever attempted to educate you about the printing and finishing processes? Please describe.
11. Do you see a need for better-defined standards for finishing? *(Here is an example of this so you can understand the question better. What resources do you use or think are good and what resources are out there for designers?)*

Questions for printers/finishers

1. Describe the role you play in the graphic arts workflow. *(Including the people you work with directly)*
2. Describe the role you think designers play in the graphic arts workflow.
3. How would you describe your relationship with designers? *(If you do not have a relationship with designers, who do you have relationships with?)*
4. How much time do you spend educating designers about printing/finishing?
5. Think of an instance where a designer acted in a way that helped you do your job properly. Please describe this incident. Can you think of one more instance?
6. Think of an instance where a designer did something that hindered you from doing your job properly. Please describe this incident. Can you think of one more instance?
7. Do you feel like the finishing considerations are not given enough thought in the beginning stages of the piece? If yes, what are the consequences of this for you?
8. On a scale from one to ten, ten being very knowledgeable, one being not at all knowledgeable, rate the average designer's knowledge of the area of finishing.
9. Put yourself in the shoes of a designer. How do you think that they view the finishing process?
10. If you were to organize a seminar that taught designers about finishing processes, what would the main topics be? What are the most important/critical issues that they should be concerned with?
11. Do you see a need for better-defined standards for finishing? *(Here is an example so you can understand the question better. What resources do you use or think are good and what resources are out there for designers?)*

Appendix B

Appendix B

Extended Results Data

For confidentiality purposes, the interview subjects are referred to numerically, such as F-1 through F-10 for printers/finishers and D-1 through D-12 for designers.

Rochester-Related Information

Although this study was completed in Rochester, NY, it is reflective of trends throughout the industry. It was relevant to document interview subject references to the area. F-10 stated, "It is obvious that Rochester is a very big printing town because of RIT (Rochester Institute of Technology)." D-10 stated, "Most often, people I deal with here, particularly in Rochester, know what they are doing." D-4 stated, "I think printers and finishers are very in tune, especially in Rochester, with what the design agencies are doing."

Designers' Question Results

Twelve professionals (D-1 to D-12) involved in the creative or design end of the graphic arts workflow were interviewed. The size of their companies ranged from small to very large, while their industry experience ranged from one and a half to twenty-seven years. D-1, as a production supervisor and not a designer, is still involved in projects, but does not design or create the initial digital file. All of the interview subjects worked with projects that required some type of finishing.

Table 1B: Designer interview subject information

Designer	Job description	Type of company	Percent of work that is finished	Years experience in the graphic arts industry
D-1	Production Supervisor (technical and budget support, no actual designing)	Advertising (large)	99%	20
D-2	Designer	Design (small)	60%	6
D-3	Creative Supervisor (design and production)	Marketing communications	95%	15
D-4	Vice President / Operations	Advertising and marketing communications	80%	20
D-5	Designer	Advertising (large)	99%	1.5
D-6	Creative Arts Assistant (internal promotional designer)	Non-design	50%	3
D-7	Creative Director	Advertising	40%	27
D-8	Creative Director	Advertising (large)	30%	15
D-9	Designer	Creative / communications	70%	15
D-10	Creative Director	Marketing communications	75-80%	8
D-11	Creative / Designer	Self-owned design	80%	14
D-12	Designer	Self-owned design	50%	12

Question 1, Designers (D): Please briefly describe your workflow process from concept through development to completion of a product.

The workflow processes and procedures the designers described were very similar to each other. Several of the designers described their workflows up to the point of press approvals. They were then prompted to discuss processes that occurred after the projects were printed. Many of them were not directly involved in these end-of-the-workflow processes, especially when the finishing was not done by the printer printing the job.

Larger agencies have on-staff production managers. Smaller companies do not have someone specifically within the company to handle production, and sometimes hire out contract production managers. In the cases where a production manager is present, he or she often acts as a liaison between the designers and the printers/print sales people. Account managers at the creative companies act as liaisons between the clients requesting the work and the designers. Therefore, sometimes the flow of information goes through the initial client, an account manager, a designer, a production manager/mechanical department, a printing sales representative, a prepress department, a printer and a finisher (not included if finishing is done by the printer). Some projects then go directly to the client, but most involve distribution and mailing.

Projects where complex finishing is not needed, such as in-line laminations, folding, stitching and trimming, are often completed by the same company that prints the job. However, finishing such as die-cutting, foil stamping, embossing, special laminations, boxes and other more complex processes are finished at separate finishing companies. There is a possibility of five degrees of separation that can exist between the designer and finisher. If the initial client is responsible for getting the job printed or has its own production group, the gap could be greater. Also, very often the printer is not involved in the workflow until the job is in the process of being designed or the design has been completed. Sometimes designers attend press approvals, but are not involved in the finishing side of the workflow and only see the finished product after the entire project has been completed. Even if designers see finishing proofs, often the jobs have already been printed and it is too late to make necessary adjustments to the digital files.

In a typical project workflow, depending on company size and the people that are involved, the client contacts the design agency account representative with a project idea and the representative draws up a creative brief. The account representative meets with production, an art director and a writer, internal design reviews take place, concepts are reviewed with the client and photography/artwork is created. Client revisions are made until the design is approved. A mechanical (digital press-ready file) is prepared and sent to the production manager (at larger companies this position is internal). Quotes are acquired from different printing companies. The mechanical is sent to a printing sales representative (sometimes accompanied by a printed version of the project). The digital file goes through the printer's prepress department. Proofs are viewed by the designer/client. The designer or production manager may attend a press approval. The project is printed and finished (sometimes there is a finishing approval). Then, the project is distributed to the client/audience and a final sample may be shown to the designer.

D-2 used to mark up the printing cost about 15% for coordinating the printing, however, many times now clients are not willing to pay for that time anymore. D-3 stated that the production manager acquires quotes from several printers and gets their production recommendations in order to lower the project cost. They may choose a printer based on in-house finishing capabilities, so there is not a need to go back and forth between different vendors.

Question 2 (D): Describe the role you think finishers play in the graphic arts workflow.

Some designers do not have direct contact with finishers, but are more directly in contact with printers. Designers see finishing as an integral part of the process that

happens at the end of the workflow and may be overlooked in the beginning stages. Many designers rely on printers to take care of the finishing aspect of the workflow, and put faith in the finishers to successfully complete a job. The designers used terms like "partner" and "advisor" when referring to their printers and finishers.

Question 3 (D): How would you describe your relationship with finishers?

Question three was linked very much to question two and some of the same responses were stated. Many designers see their relationships, most often with printing sales representatives, as partnerships built on respect. Designers rely on printers/finishers to provide technical knowledge and insight. Communication and personal comfort level were stressed as key factors for a high-quality relationship. The relationships were good, especially if designers had previously worked on multiple projects with those printers. The designers stated that if a bad experience occurred, they no longer would retain a relationship with that company. Because designers are printers' clients, it is beneficial for printers to maintain good relationships with them, especially in a competitive market.

D-2 stated that the information from a printer is sometimes second or third hand from a bindery. When D-2 asks printers finishing questions, printers many times need to go back to the binderies to get the answers. However, the overall feeling from the interview subjects was that they have developed relationships over time and do business with those printers that are the best to work with and produce the best results.

Question 4 (D): What percent of the time do you think your printers/finishers supply you with the correct information?

Table 2B. Percent of time printers/finishers supply designers with correct information

Designer	Percent of time
D-1	100%
D-2	80%
D-3	95%
D-4	99%
D-5	85%
D-6	90%
D-7	90%
D-8	90%
D-9	95%
D-10	90%
D-11	85%
D-12	90%

Average: 90.75%

The designers commented that they only work with companies that provide good experiences. However, D-2 stated that printers may say something to make her happy, calm her nerves or acquire a job, but their statements may not be completely true. D-7 stated that there is room for error in the graphic arts business and designers need to be careful. D-10 stated that in the cases where printers/finishers supply less than great information, it is because they may be trying to save money. D-8 stated that production managers may be able to answer this interview question better.

Question 5 (D): If you could change anything about your printers/finishers, what would it be?

D-1 and D-4 stated that they would not change anything about their printers/finishers and D-4 stated that he would like to be more knowledgeable about finishing. Six of the designers stated that they would like printers/finishers to spend more time educating them about printing/finishing, specifically with physical examples and about new processes. They also would like printers/finishers to have more time to answer questions. D-7 and D-5 explicitly wanted to see better and clearer communication on the part of their printers/finishers. Communication and education are related because you have to communicate with someone in order to educate them. D-3 spoke about timelines and communication when deadlines are not met on both sides. D-12 would like printers/finishers to be more responsive and timely. D-8 would change the workflow with printers regarding the RGB to CMYK conversion process.

Question 6 (D): On a scale from one to ten, ten being very knowledgeable, one being not at all knowledgeable, rate your printers'/finishers' knowledge of design or the design community.

Table 3B. Designers rate printers'/finishers' design knowledge

Designer	Rating
D-1	10
D-2	8.5
D-3	9
D-4	10
D-5	5
D-6	7
D-7	7
D-8	10
D-9	7
D-10	7
D-11	6
D-12	8.5

Average: 7.9

A majority of the designers (eight) responded with values greater than or equal to seven and thought the printers/finishers they work with were fairly knowledgeable about them. D-7 and D-10 stated that printers'/finishers' knowledge of designers and the design community varied based on the particular company. D-11 stated that finishers were somewhat detached from designers. D-5 stated that she did not have any information on which to base her answer.

Question 7 (D): Rate from one to ten, ten being very knowledgeable, one being not at all knowledgeable, your knowledge of finishing technologies and operations.

Table 4B. Designers' self rating of finishing knowledge

Designer	Rating
D-1	10
D-2	6
D-3	7
D-4	7
D-5	5
D-6	8
D-7	9
D-8	8
D-9	3
D-10	7
D-11	6
D-12	8.5

Average: 7

It may not be fair to include D-1 in the finishing knowledge average because D-1 is a production manager (not a designer), who by job definition may be more involved and knowledgeable of finishing operations. The average not including D-1 is 6.8.

A few of the designers stated that when they began their design careers, their knowledge of finishing was much less and they had learned through experience. Some of the designers stated that they were not as familiar with more complex finishing such as special bindings, panel dimensions, gluing or die-cutting.

Question 8 (D): Think of an instance where a printer/finisher acted in a way that helped you do your job properly. Please describe this incident. Can you think of one more instance?

Many of the positive instances occurred because of interactions between designers and printers/finishers. Communication and education together played an important role.

Table 5B. Instances where printers/finishers helped designers

Instance	Binding saddle (s) perfect (p) mechanical (m)	Trimming (t) cutting (c) gluing (g)	Folding (f)	Die-cutting (d) foil stamping (f)	Point-of-purchase (p)	Paper (p) ink (i) functionality (f) other	Mailing (m)	Communi-cation occurred (c)	Designer was educated (e) Designer already had knowledge (k)
D-1.a		g	f	d		f	m	c	
D-2.a				f				c	e
D-2.b						spot varnish			(printer set up file)
D-3.a						i (heat sensitive)		c	e (printer did research)
D-3.b	m (spiral)		f (French, pockets)			p / varnish		c	e
D-3.c							m (size / codes)	c	e
D-4.a			f (pocket)			f / depth		c	e (provided dummies)
D-5.a					p			c	e (shown machinery)
D-5.b				d		p (vellum)		c	e (shown samples)
D-6.a			f (CD package)	d		i (Pantone) / UV laminate			e (printer did research and caught finishing error)

Table 5B (continued).

Instance	Binding saddle (s) perfect (p) mechanical (m)	Trimming (t) cutting (c) gluing (g)	Folding (f)	Die-cutting (d) foil stamping (f)	Point-of-purchase (p)	Paper (p) ink (i) functionality (f) other	Mailing (m)	Communi-cation occurred (c)	Designer was educated (e) Designer already had knowledge (k)
D-6.b	open sown					i (duotones) / blind emboss / perforations		c	e (shown machinery)
D-7.a			f	d			m (invitation)	c	e
D-7.b	s					p (translucent)		c	e (shown samples)
D-8.a						p (iridescent, drying)		c	
D-9.a						UV gloss		c	e (shown samples)
D-9.b		g				p / overlay insert / film / varnish		c	e
D-9.c		g	f (pocket)	d		f			
D-10.a			f (box)	f / d		p / f	shipping	c	e (physically worked together)
D-10.b				d (bottle neck hanger)				c (finisher supplied die-line)	
D-11.a	sown booklet		f (handmade invitation)			p / tape		c	e / k (meeting with finisher)
D-11.b			f (business card)			p (translucent)		c	e (shown samples)
D-11.c			f (invitation / pocket)			p (vellum, iridescent) / i (metallic) / rivet / ribbon		c	e (shown samples)
D-11.d		c	f			i (metallic, PMS) / varnish / p	m (self-mailer)	c	e / k
D-12.a			f (pocket)	d		f		c	e / k
D-12.b			f (roll)	d				c (finisher supplied die-line)	

There were many examples involving paper, ink and varnishes. Folding and die-cutting were two of the major operations discussed. A few of the instances involved the functionality of the piece and binding. Mailing, foil stamping, laminating, embossing,

perforating, inserts, glue and mounting, hand-finishing, riveting and digital file preparation were also mentioned.

A majority of the examples were very successful because of the knowledge, research efforts and education on the part of printers/finishers. They were able to communicate effectively with the designers and work together with them to achieve the desired goal. In a few instances, printers/finishers invited designers into their companies. This allowed them to work more closely with designers and educate them about machine capabilities and production. In other instances printers/finishers provided paper dummies, samples and other illustrative aids that helped designers and designers' clients to visualize the projects. In a few cases mentioned, it was helpful to designers when printers/finishers supplied die-lines.

The results of effective communication and education were happy clients, saved time and money, increased project quality and efficiency, better functionality, less waste and better response rates from target audiences.

Question 9 (D): Think of an instance where a printer/finisher did something that hindered you from doing your job properly. Please describe this incident. Can you think of one more instance?

The examples ranged from instances involving finishing technologies, to miscommunication and personality issues to technical problems. A lack of communication and education on the part of designers as well as printers/finishers was apparent.

Table 6B. Instances where printers/finishers hindered designers

Instance	Binding saddle (s) perfect (p) mechanical (m)	Trimming (t) cutting (c) gluing (g)	Folding (f)	Die-cutting (d) foil stamping (f)	Point-of-purchase (p)	Paper (p) ink (i) functionality (f) other	Mailing (m)	No communi-cation (nc)	Designer lacked knowledge (nk)
D-1.a						product not delivered on time		nc	
D-2.a						InDesign (transparent type)		nc	nk / printer lacked knowledge
D-2.b						p (dull coated) / i (metallic, did not dry)			nk / printer lacked knowledge
D-3.a	s (creep)	t						nc	nk
D-3.b						bill higher than estimate		nc	
D-4.a	s (creep)	t						nc	nk
D-4.b	s	t				process variation		nc	nk
D-5.a				d (bottle neck hanger)		f		poor communi-cation	nk / finisher lacked knowledge
D-5.b		t		d (scratch-off card)				poor communi-cation	nk / finisher gave vague spec sheet
D-6.a	s	t (insert, size)				machine capabilities			
D-6.b			f (accordion)			p (buckling, no scores, light weight)		nc	
D-6.c						InDesign (printer could not accept files)		printer rude / did not provide pres proof	
D-6.d						printing (transparent Pantone colors)		print rep busy, talked to multiple people	nk
D-7.a						p (stock) / i		nc	nk / printer lacked knowledge

Table 6B (continued).

Instance	Binding saddle (s) perfect (p) mechanical (m)	Trimming (t) cutting (c) gluing (g)	Folding (f)	Die-cutting (d) foil stamping (f)	Point-of-purchase (p)	Paper (p) ink (i) functionality (f) other	Mailing (m)	No communi-cation (nc)	Designer lacked knowledge (nk)
D-7.b						p (weight) / f		nc / poor communi-cation	nk / printer lacked knowledge
D-8.a						p (low quality, small budget)			
D-9.a	m (comb)	t (insert)						nc	
D-9.b							m (incorrect envelopes)	poor communi-cation	
D-9.c						i (color)		nc	
D-9.d						printers do not have software programs			
D-10.a				d	p (stand)	f (display did not stand up)			finisher lacked knowledge
D-10.b				f (business card)		foil flaked off		nc	nk / finisher lacked knowledge
D-10.c						print salesperson too aggressive		nc (rep made decisions on own)	
D-11.a		t (catalog)						nc	nk
D-11.b						embossing (uneven pattern)		nc	
D-11.c						i / printing (registration, file preparation)		nc	
D-12.a		t (insert)						nc	nk
D-12.b			f (pamphlet)			i (Kinko's ink jet, cracking)		nc	client lacked knowledge
D-12.c						i (process inks through a laser printer)			nk

Among the problematic finishing instances, the topics discussed were saddle stitching, trimming, folding, foil stamping, point-of-purchase displays, embossing, inserts and die-cutting. Although the designers were encouraged to discuss finishing-related

instances, many of them focused on prepress and printing issues. Many of the examples involved paper and ink choices. A few examples involved software programs and technology. A few more examples focused on miscommunication, personality conflicts, poor business ethics, project timelines and cost. In some of the instances, the designers stated that the printers/finishers lacked the necessary knowledge.

The lack of communication and education or poor communication resulted in frustrations, disappointments, clients unwilling to pay for jobs, litigations, and the loss of time, money and product quality.

Question 10 (D): Do you think that you have learned a lot from the knowledge of your printers/finishers? Have they ever attempted to educate you about the printing and finishing processes? Please describe.

In order to quantify the responses, designers were asked to estimate the amount of time printers/finishers educate them. The answers were converted to minutes per week.

Table 7B. Time (minutes per week) designers are educated by their printers/finishers

Designer	Time
D-1	2.3 min.
D-2	0 min.
D-3	45 min.
D-4	15 min.
D-5	45 min.
D-6	360 min.
D-7	15 min.
D-8	30 min.
D-9	45 min.
D-10	300 min
D-11	15 min.
D-12	0 min.

Average: 72.7 min.

About 83% of the designers were educated by their printers/finishers zero to forty-five minutes each week. This means that in a forty hour week, those designers are educated by their printers/finishers less than 2% of their time.

Some designers stated that they have learned a lot, while others have not learned anything from their printers/finishers. A few designers stated that printers/finishers spent more time educating them at the beginning of their careers. According to the designers, the time per week they are educated depends on variables such as the amount of projects they are working on, project complexity, the introduction of new technology and the printers/finishers.

Question 11 (D): Do you see a need for better-defined standards for finishing?

In order to help the designers understand the question better, they were shown volume one and two of *The Professional's Guide to Folding* by Trish Witkowski. Many designers had positive feedback about the folding guide. D-2 and D-8 stated that the guide was a helpful resource for technical measurements. D-9 and D-11 stated that it was technically and creatively helpful. D-5 and D-7 saw the resource as an idea generator. D-3 stated that it was a good visual example to show clients. Four other designers had less specific but positive reactions to the guide. D-10 did not find the guide useful and relies on printers/finishers for that type of knowledge. However, D-10 stated that the resource may be helpful to beginners in the industry.

Many designers made comments and suggestions about how they have acquired knowledge (including resources they use) and experience, as well as how designers in the industry could become more knowledgeable about printing/finishing. Some designers offered suggestions to improve the workflow process utilizing communication and

resources. Many of the references the designers currently use are free, printed guides from paper companies and books/magazines on finishing. Others expressed the importance of experience in the industry and direct interactions with printers/finishers. Working in or touring printing and finishing facilities was also suggested. The general consensus was that resources such as the one shown would be helpful and beneficial to designers.

Printers'/Finishers' Question Results

Within F-1 through F-10, there are companies that are printing companies with in-house finishing (printers) and companies that only handle finishing operations (finishers). Five of the printers/finishers work for "finishing" companies, while four work for "printing" companies that handle in-house finishing and one works for the United States Post Office (USPS). Since designers choose to work directly with the USPS worker for mailing advice, this relationship was taken into account when analyzing this professional's answers. The printers/finishers ranged from two and a half years to forty-seven years experience in the graphic arts industry. Seven of the printers/finishers have at least eighteen years experience.

Table 8B: Finisher/printer interview subject information

Printer / Finisher	Job description	Type of company	Percent of work finished in-house	Years experience in the graphic arts industry
F-1	Vice President Quality Assurance	Printing	50%	40
F-2	Mailpiece Design Analyst	United States Postal Service	N / A	12
F-3	Binder	Bindery	90%	24
F-4	Production	Binding and finishing	100%	30
F-5	President	Binding and finishing	100%	38
F-6	Account Manager	Printing	90%	26
F-7	Account Representative / Sales	Printing	80%	26
F-8	Estimator	Printing	55-60%	18
F-9	Structural designer / Finisher	Packaging / Point-of-purchase displays	95%	2.5
F-10	Operations Manager	Finishing	100%	13

Printers and finishers were interviewed because they are both involved in the finishing industry and produce finished projects. More and more printers are adding simple finishing procedures to their services.

One of the interview subjects involved with the creative side (D-4) stated:

> Most of the printers in town now are handling their own finishing and bindery as a matter of economics and workflow. I have seen a trend where there used to be just finishing houses in town. A lot of printers are handling finishing themselves now because they would like to be able to manage projects, keep costs in-house and maintain their workflow so projects are not leaving the shop and then coming back. This way, printers can maintain projects a lot better. Those printers are providing a valuable service because they can be a one stop source of information for designers during project development. Just like I would check on the content for a business reply

card with the post office, I can ask the printer questions about the project and how everything is going to work out. I look to them for feedback.

Question 1 Finishers (F): Describe the role you play in the graphic arts workflow.

In describing the role they play in the graphic arts industry, the interview subjects saw themselves as providing a service for the people that they work with directly. The "finishers" described their role as working almost exclusively with printers and not with designers. The subjects that worked for printing companies with in-house finishing capabilities described their role as working with a multitude of people. These people include the initial customers who pay the bills and initiate projects, outside finishers if the finishing is unable to be accomplished in-house and designers who design the projects.

Question 2 (F): Describe the role you think designers play in the graphic arts workflow.

The printing companies with in-house finishing work with designers more directly. However, they stated that they almost always acquire a job after the design has been completed, not allowing for communication to occur between the designer and the printer. Designers work with the initial customer and sell their creative ideas to them first before the printers become involved. The printers stated that they rarely have a chance to provide advice or interface with designers at an early stage in the workflow. The first interactions between designers and printers are often in the proofing stages, which is too late to make changes to the digital files.

The finishers interact directly with printers and not designers, but deal with what results from designers' decisions. Many finishers feel that the designer's role in the workflow should involve more communication with the finisher, which currently does

not happen very often. The finishers assume that printers provide information to designers, but printers may not be knowledgeable about more complex finishing because it is not handled in-house. Out of the five "finishers" interviewed, D-9, who works with point-of-purchase display items, specialty packaging and fulfillment, interacts more directly with designers.

Question 3 (F): How would you describe your relationship with designers?

Question 2 and Question 3 produced similar results. Most of the finishers did not interact with designers or have relationships with them. F-4 and F-5 were unable to answer the question because they did not have a relationship with designers. F-3 described his relationship with designers as only by telephone, but would like designers to physically be able to see the bindery equipment. F-10 interacts with designers when they come, accompanied by printers, for finishing proofs. However, this only occurs a couple times a month, or about 1% of the time. F-9 sometimes has a relationship with designers, depending on the agency. When communication does occur during the workflow, especially with design agencies finishers have established relationships with, it is helpful. F-2 has a direct relationship with designers and described that relationship as a good one.

Printers felt their interactions with designers often happened too late in the workflow, causing problems. The first interaction between a printer and designer, if one does occur, often occurs at a press approval. The consensus between the printers was, in most situations, the print buyer gives them a CD with a digital file on it, accompanied by laser print outs. A relationship or communication with designers is nonexistent.

F-7 described his relationship with designers as cordial and supportive. However, he stated that most of the time a job is designed for a customer and then awarded to him with limited previous contact.

Question 4 (F): How much time do you spend educating designers about printing/finishing?

The answers were converted to minutes per week. A few of the answers were ambiguous, but an average was taken from the specific numeric responses.

Table 9B. Time (minutes per week) printers/finishers spend educating designers

Printer / finisher	Time
F-1	0 min.
F-2	Depends on the project
F-3	300 min
F-4	0 min.
F-5	0 min.
F-6	Very little
F-7	30 min.
F-8	60 min.
F-9	60 min.
F-10	24 min.

Average: 59.3 min.

Because designers have limited contact with companies that solely handle finishing, the finishers have little opportunity to educate designers. However, they feel that if they educate their clients (printers), hopefully, that knowledge and information will be passed on to designers through the printers. Although, some finishers believe the distance between them and designers is not right and sometimes printers are not fully knowledgeable about finishers' capabilities. F-10, who does not educate designers, stated

that he spends about twenty hours, or half of his time educating printers about finishing processes.

Printers with in-house finishing believe that the role of a print salesman includes educating clients, who are many times designers. The amount of education may correlate with the complexity of a job. F-1's company holds onsite seminars at client firms. F-7, a printer who spends a half hour per week educating designers, stated that 25% of that time is spent on finishing. F-8, who spends an hour a week educating designers, especially when a design is not printable, stated that his company's prepress department spends quite a bit of time educating designers about setting up files properly for printing.

Question 5 (F): Think of an instance where a designer acted in a way that helped you do your job properly. Please describe this incident. Can you think of one more instance?

Printers/finishers had more difficulty remembering and describing examples where designers helped them do their jobs properly than when they were asked to describe instances where designers hindered them from doing their jobs properly. In total, fourteen helpful examples were described. However, one finisher made an interesting point concerning this matter. F-10 stated, "It is easier to think of examples where designers have not helped. This may be because you do not notice or remember jobs that come in and work properly as much as those that do not." F-5 could not think of any instances where designers have helped to complete a job properly.

Table 10B. Instances where designers helped printers/finishers

Instance	Binding saddle (s) perfect (p) mechan-ical (m)	Trimming (t) cutting (c) gluing (g)	Folding (f)	Die-cutting (d) foil stamping (f)	Point-of-purchase (p)	Paper (p) ink (i) function-ality (f) other	Mailing (m)	Commu-nication occurred (c)	Designer was educated (e) Designer already had knowledge (k)
F-1.a		c / t				process variation		c	e
F-2.a							m (postcard)	c	e
F-2.b		c / t / g	f				m (self-mailer)	c	e
F-3.a	p (spine boarders)							c	e
F-4.a	m (wire)								k
F-6.a			f	d (envelope)				c	e
F-7.a						i (PMS colors)		c	e
F-7.b	s			d		crossovers / registration / i (cracking)		c	e
F-8.a		g	f	d (die-line)					k
F-8.b				f (trap)					k
F-9.a				d (die-line)	p				k
F-9.b				d (bleeds)	p				k
F-10.a				d (bleeds)				c	e
F-10.b				f (bleeds)					k

Many of the positive examples involved communication between designers and printers/finishers where printers/finishers were able to educate designers. In these instances, designers provided printers/finishers with mock ups of jobs before the projects

were printed. Therefore, alterations could be made to the digital files. These alterations facilitated the production of the pieces and also saved time and money. However, the helpful instances were infrequent. F-1 could only count about fifty helpful designer instances in forty years experience, which is equivalent to one or two helpful instances a year.

Some of the examples entailed jobs where designers were knowledgeable about finishing processes and made intelligent decisions to facilitate production without the help of printers/finishers. However, the printers/finishers stated that cases where designers made correct and knowledgeable file preparation decisions on their own were rare.

One helpful example not cited in the table, involved communication between the printer and finisher. In this case, discussions were conducted about laminating. Because of this sharing of information, time, money and resources were saved.

Question 6 (F): Think of an instance where a designer did something that hindered you from doing your job properly. Please describe this incident. Can you think of one more instance?

About two and a half times more hindering instances were described by printers/finishers than helpful instances.

Table 11B. Instances where designers hindered printers/finishers

Instance	Binding saddle (s) perfect (p) mechan-ical (m)	Trimming (t) cutting (c) gluing (g) scoring (s)	Folding (f)	Die-cutting (d) foil stamping (f)	Point-of-purchase (p)	Paper (p) ink (i) function-ality (f) other	Mailing (m)	No communi-cation (nc)	Designer lacked knowledge (nk)
F-1.a		t / c / g	f			process variation			nk
F-1.b		g		d		tabs / crossovers / pockets			nk
F-1.c	s (creep)							nc	nk
F-2.a							m (objects in envelope)	nc	nk
F-2.b							m (contrast on envelope / readability)	nc	nk
F-2.c							m (no room for address or barcode on envelope	nc	nk
F-2.d							m (envelope tabs and wafer seals)	nc	nk
F-3.a	p (size of book)					p (binding choice)		nc	nk
F-3.b	p					guess on spine size		nc	nk
F-3.c	p					p (grain direction)		nc	nk
F-4.a			f (color breaks)					nc	nk
F-4.b				d (small points)				nc	nk
F-4.c						p (cheap) / i		nc	nk
F-4.d	m (wire, cover not larger than text block							nc	nk
F-4.e		g	f (pocket)					nc	nk
F-4.f		s (folder vs. letterpress)				i (cracking)		nc	nk
F-5.a		s (one score vs. box score)	f (pocket)					nc	nk
F-5.b				d (bottle neck hanger)					

Table 11B (continued).

Instance	Binding saddle (s) perfect (p) mechan-ical (m)	Trimming (t) cutting (c) gluing (g) scoring (s)	Folding (f)	Die-cutting (d) foil stamping (f)	Point-of-purchase (p)	Paper (p) ink (i) function-ality (f) other	Mailing (m)	No communi-cation (nc)	Designer lacked knowledge (nk)
F-5.c			f (roll)					nc	nk
F-5.d						P / i / critical crossovers		nc	nk
F-6.a						Velcro / tab / p / f		nc	nk
F-6.b						p (coating) / f		nc	nk
F-7.a			f (roll)					nc	nk
F-7.b			f (gate)					designer resists suggestion	nk
F-7.c						p (choice)		designer resists suggestion	nk
F-8.a			f (folder)	d		front to back registration		nc	nk
F-8.b			f (roll)					nc	nk
F-8.c						color proof		nc	nk
F-9.a				d (bleeds)	p			nc	nk
F-9.b				d (die-line)	p			nc	nk
F-9.c			f (carton)			panel sizes		nc	nk
F-9.d					p	p (weight) / f		nc	nk
F-9.e			f		p		shipping cost	nc	nk
F-9.f						color proof		nc	nk
F-10.a			f (roll)					nc	nk
F-10.b				d (bleeds)				nc	nk

Folding was discussed frequently, especially roll folds. Another common topic was paper, especially type, weight, and its interactions with ink, toner and glue. A third large area was die-cutting, especially with bleeds and a particular starburst shaped die-cut referred to as a "bottle neck hanger" or "necker" (tags placed around the neck of a bottle). Problems with distribution methods such as mailing and shipping were also cited. Some other instances involved binding, functionality and safety issues.

In most of the instances, designers lacked the necessary finishing knowledge. Also, communication about the finishing processes (capabilities/limitations) and materials did not occur between the designers and printers/finishers. It is important to note that in some cases, the print salespeople also lacked knowledge about finishing operations.

In a few of the instances where communication occurred, designers were resistant to suggested changes or advice provided by their printers/finishers.

Although the focus of this study is finishing, the color proofing and printing instances should not be ignored. It is very important for designers to be knowledgeable about printing as well as finishing processes.

Question 7 (F): Do you feel like the finishing considerations are not given enough thought in the beginning stages of the piece? If yes, what are the consequences of this for you?

Most of the interview subjects, whether it was printers with in-house finishing or finishers, stated that finishing considerations are not given enough thought in the beginning stages of the piece. F-8 stated that it was not a clear-cut answer and sometimes finishing considerations are not given enough thought in beginning stages. However, none of the respondents stated that finishing considerations are given enough thought in the beginning stages of the piece. Negative consequence of this are lost time and money. Other related results are customer disappointments, substandard products, bounced jobs (customer will not pay for the job), payment battles or legal situations, frustration, missed opportunities for creativity and extra work making fixes to digital files.

Question 8 (F): On a scale from one to ten, ten being very knowledgeable, one being not at all knowledgeable, rate the average designer's knowledge of the area of finishing.

Table 12B. Printers/finishers rate designers' knowledge of finishing

Printer / finisher	Rating
F-1	1.5
F-2	8
F-3	6.5
F-4	3.5
F-5	3
F-6	5
F-7	7
F-8	5
F-9	6
F-10	5

Average: 5.1

Question 9 (F): Put yourself in the shoes of a designer. How do you think that they view the finishing process?

Most of the printers/finishers stated that designers do not understand the finishing process and view it incorrectly. Some printers/finishers stated that designers only focus on the initial design side of the workflow and may be too busy to spend time on finishing. F-7 stated that designers are not intimidated by finishing and know when to ask for advice. F-2 stated that designers are probably excited to see projects completed successfully.

Question 10 (F): If you were to organize a seminar that taught designers about finishing processes, what would the main topics be? What are the most important/critical issues that they should be concerned with?

Printers/finishers thought it would be helpful for designers to acquire first-hand experience at binderies and learn from knowledgeable mentors. Other suggestions included teaching designers about common design problems and assessing the costs of design decisions. Designers should also learn about finishing that is hand-made versus that which can be produced on a machine, workflow steps, asking the right questions and communicating with printers/finishers (especially about machine/material limitations). Another educational idea involved the creation of a guide for designers by finishers about specific machines and their limitations. Some of the printers, who handle finishing in-house, suggested that a "finisher" has more knowledge about finishing and is more qualified to educate designers at a seminar about finishing.

Specific topics that were discussed:

- Distribution
- Mailing rates
- Varnishes
- Foil stamping
- Scoring
- Die-lines
- Process variation
- Functionality
- Consistency
- Design crossovers
- Substrate properties

(grain direction, opacity, weight, paper and ink interactions with bleeding and drying time and cracking, quality and durability of papers and cover materials,

- Shipping costs
- Dimensions (min and max)
- Folding (especially roll folds)
- Binding methods (comb, perfect, saddle stitched)
- Die-cutting
- Punching
- Digital file preparation
- Job size and weight
- Digitally printed pieces and finishing
- Affects of finishing machines on the printed surfaces

static and curling properties, paper/laminate/glue interactions, smooth and rough sides of substrates and the affects of humidity and temperature)

Question 11 (F): Do you see a need for better-defined standards for finishing?

Volume one and two of *The Professional's Guide to Folding* by Trish Witkowski was the finishing standard example that was shown to each interview subject. A majority of the printers/finishers had positive feedback about the publication. Several stated that the books were helpful and they did not realize there were so many ways to fold a piece of paper. F-1 stated that the books could be part of the curriculum requirements for a finishing program for designers. F-8 stated that designers as well as printers should have this type of book as a resource.

F-2 did not see a need for other standards besides the multiple postal regulations publications that are available, along with the USPS website. F-6 stated that education is necessary, but not "standards," in a strict sense of the word, because they contradict goals for differentiation in an industry where designers try to push the envelope. A few people expressed their concerns that it may be difficult to create standards because of uncontrollable process variables such as temperature and humidity.

F-10 stated that although things like technology change, there are still constants and basic principles in finishing that do not. F-10's concern was distributing the information to those who need it. F-10's company created a guide for customers explaining the limitations of one of their finishing process and it proved to be a valuable investment.

Appendix C

Appendix C

Recommendations for Graphic Design College Curriculum

Key curriculum concepts

- Explanations of each finishing process
- Key questions to ask finishers about finishing processes
- Explanation of process variation and equipment limitations so that designers may have an accurate understanding and real expectations for final products
- Relationships between finishing materials and processes and how they can affect each other positively or negatively
- Explanation of the entire graphic arts workflow
- Illustrations or actual examples of types finishing in flat sheets before they were finished as well as the finished pieces
- Relationship of production cost and design decisions
- Proper digital file preparation/relationship of digital file to physical project
- Finishing terms and definitions
- An online or print resource for designers to reference

Specific recommendations for student exercises

- Have design students work on a project from start to finish, utilizing other areas of study at the college, such as printing
- Show examples of poor design and ways that it could have been improved if other choices were made
- Have the students tour a printing company and a finishing company or even spend time working at these facilities
- Exercises on how to create a die-line, create trap for a foil stamp, create push out for a saddle stitched booklet, create enough room on the bound edge for a perfect bound book and for a comb binding, create a bottle top neck hanger and create a roll fold
- Discussions and worksheets on key questions that should be asked before designing for each of the finishing process

- Discussions about the most common problems that designers face in the graphic arts industry
- Discussions of concepts from *The Professionals Guide to Folding*

Appendix D

Appendix D

Recommended Communication Questions (partial list)

Materials (paper/ink/varnish/adhesive)

- How does grain direction play a part in the production of the project?
- How does grain direction affect the folding or binding of the project?
- How does the paper stock affect the print quality?
- Am I going to need a varnish on this ink with this paper stock in order for it to dry/cure properly? (Especially with metallic inks and heavy ink coverage)
- Where will this project be adhered together and how?
- How will the adhesive affect the project/ink/paper?
- How will this UV coating affect my paper, scoring, stamping, embossing, or folding processes?

Binding

- In a saddle stitched booklet, do I need to account for creep in my file setup? If so, what are the specifics? Could you send me calculations for the sizes for each page?
- At this paper thickness, what is the maximum number of pages that can be bound using saddle stitched binding?
- How much space should I leave for the bound edge on a perfect bound booklet?
- How should I determine the spine width of this perfect bound book? How should my design be altered to accommodate this?
- With this paper stock and ink process, what are the minimum/maximum number of pages needed for perfect binding?
- How much room do I need to leave on the bound edge of this comb bound/ wire bound book?
- How much larger than the internal pages do I need to make the front and back covers for this wire bound/comb bound book?

Folding/trimming/scoring

- I know that the panels on a roll fold are not all the same. What are the panel sizes for each of these panels in this roll fold?

- Do I need to score this paper with this ink combination before it is folded?
- How does my paper thickness affect folding and dimensions?
- What are the benefits of using letterpress scoring versus scoring on the folder?
- How should this pocket folder be folded to get the least amount of wrinkling?
- I have multiple critical crossovers in my design. How will that affect the folding/trimming time?

Die-lines/embossing/foil stamping

- Do I need to create a die-line or are you creating it?
- Can you please provide me with a die for this bottle neck hanger?
- How much bleed should I leave around my die-line?
- Are you going to set up the trap for this foil stamp or should I? If I need to, what amount of trap should I use?
- Embossing and debossing both involve heat and pressure. How will that affect my paper, especially if it has a texture?
- Will this foil stamp work with this paper stock? Are the foil coverage areas too large or small?
- What is the opacity of this foil? Will it look differently on different colored paper stocks?

Functionality/distribution/cost

- What will this project be used for and is it designed with functionality in mind?
- Is the paper weight to heavy/not heavy enough to handle the utility or durability needs?
- This project will be handled a lot. Will I have issues with fingerprinting?
- What are the limits to my dimensions of the final piece and in the digital file?
- Can this project be produced on a machine rather than assembled by hand?
- Can this project be mailed inexpensively? (Please refer to postal guidelines and regulations)

Digital printing

- Will there be cracking in the toner when finishing processes such as folding occur?
- How does toner affect the paper thickness and the spine width of a book?
- Will there be marking on the printed surface from the finishing equipment?